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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/496,120	02/01/2000	GIRIDHAR D. MANDYAM	NC17089	5752

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EXAMINER
WILLIAMS, DEMETRIA A

ART UNIT	PAPER NUMBER
2631	

DATE MAILED: 12/31/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/496,120	MANDYAM, GIRIDHAR D.	
	Examiner	Art Unit	
	Demetria A. Williams	2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 February 2000* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,8 and 10-18* is/are rejected.

7)☒ Claim(s) *6,7,9,19 and 20* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Objections

1. Claim 1 is objected to because of the following informalities: the phrase "and to receive indications of the send signal subsequent to amplification by the amplifier" is repeated beginning at line 11 of the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 12, the applicant claims that the "phase rotator alters the phase component of the QPSK symbol without altering the phase component of the QPSK symbol." This statement is contradictory because it calls for altering the phase without altering the phase. Correction or clarification is requested.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-5, 8, 11, and 13-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Persson in view of Carson et al ("Carson").

Regarding claims 1 and 13, Persson discloses a system and method of compensating for amplifier distortion comprising a means for estimating distortion characteristics by comparing the input and output of the amplifier (see generally column 3, lines 24-34) and using the calculation to compensate distortion by adjusting the phase (see generally column 3, lines 24-34; column 8, lines 24-57). Persson does not specifically disclose that the method used for adjusting the phase is phase rotation. Carson discloses a system where errors in phase are corrected by rotating the phase by an amount predicted to compensate for the error (see generally abstract; column 4, line 65 – column 5, line 6). Though Persson does not disclose the actual method used in compensating for the phase error, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of Persson to include rotating the phase, as taught by Carson, in order to compensate for the distortion.

Regarding claims 2 and 15, Persson further discloses compensating for the distortion based on AM-PM response (see generally column 9, lines 6-7).

Regarding claims 3-5 and 16-18, Persson further discloses that the AM-PM response is a function of at least a first parameter, the input power of the signal (see generally column 1, lines 46-46; column 3, lines 24-34), and that the distortion estimate comprises a value for input power (see generally column 3, lines 24-34).

Regarding claim 8, Persson further discloses that the distortion is determined based on a comparison of the signal before and after amplification (see generally column 3, lines 24-26).

Regarding claim 11, Persson further discloses using a QPSK communication scheme to prevent distortion (see generally column 5, lines 58-59).

Regarding claim 14, Persson disclose a first embodiment where only the phase component is adjusted, and not the magnitude (see generally column 3, lines 21-34).

6. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Persson and Carson as applied to claim 1 above, and further in view of McNicol. Persson and Carson disclose all of the elements as described above in reference to claim 1, but neither discloses the use of training data. McNicol discloses a system and method for controlling distortion in a power amplifier wherein a known reference signal is used and the error produced by amplification is calculated (see generally column 2, lines 5-25). It would have been obvious to one or ordinary skill in the art at the time of the invention to modify the invention of Persson to include determining distortion characteristics based on training data, as taught by McNicol, in order to reduce overall distortion introduced to the carriers.

Allowable Subject Matter

7. Claims 6, 7, 9, 19, and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Regarding claims 6, 7, 19, and 20, prior art of record does not disclose comparing the input power level to a threshold value. Regarding claim 9, prior art of record does not disclose choosing a set of symbols from a constellation for determining amplification distortion.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Demetria A. Williams whose telephone number is (703) 305-4078. The examiner can normally be reached on Monday - Friday, 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (703) 305-4378. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3800.

daw
December 30, 2002

CHI PHAM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600 12/30/02